

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
11 August 2005 (11.08.2005)

PCT

(10) International Publication Number
WO 2005/072946 A1

(51) International Patent Classification⁷: **B32B 9/00**,
C23C 16/00, 16/40

Prussia, PA 19406 (US). **SILVERMAN, Gary, Stephen**
[US/US]; 19 Grouse Trail, Chadds Ford, PA 19317 (US).

(21) International Application Number:
PCT/US2004/043835

(74) Agents: **RUDMAN, Gilbert, W.** et al.; Arkema Inc., Intellectual Property Department, 2000 Market Street, Philadelphia, PA 19103 (US).

(22) International Filing Date:
30 December 2004 (30.12.2004)

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/538,640 23 January 2004 (23.01.2004) US

(71) Applicant (for all designated States except US): **ARKEMA INC.** [US/US]; 2000 Market Street, Philadelphia, PA 19103-3222 (US).

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and
(75) Inventors/Applicants (for US only): **RUSSO, David, Alan** [US/US]; 22 Brenda Lane, Audubon, PA 19403 (US). **STRICKER, Jeffery, Lee** [US/US]; 250 E. Wynnewood Road, Apartment A-22, Wynnewood, PA 19096 (US). **SMITH, Ryan, Christopher** [US/US]; 121 Buttonwood Drive, Collegeville, PA 19426 (US). **CULP, Thomas, Dudley** [US/US]; W 6025 Rim of the City Road, La Crosse, WI 54601 (US). **KOROTKOV, Roman, Yuryevich** [RU/US]; 580 American Avenue, B-508, King of

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2005/072946 A1

(54) Title: TRANSPARENT CONDUCTIVE OXIDE FILMS HAVING ENHANCED ELECTRON CONCENTRATION/MOBILITY AND METHOD OF MAKING SAME

(57) Abstract: A variety of new n-type TCO films including films with dopants having ionic sizes that approximate those of the metal oxide host material, films with stabilized rutile MO_2 , and films with A_xMO_y . The films are deposited by APCVD.